Ship 31/07

Work Order II June-24-13 2:12:13 P			*103	3700°	<b>*</b>						Page 1	ļ. ·
Item ID: D217 Revision ID: Item Name: Clamp		4. ** *	Accept	*N9	<b>00040</b>	100	)*	Setup (	Start Stop	*N:	S1* S2*	
Start Date: 6/24/ Required Date: 7/06/ Reference:	13 Start Qty: 20.00	*20* *20*		Cust l	Item ID: omer:					I W		
Approvals: Proc	cess Plan: MLJ	Date: 13 06-7	Tooling:  SPC (Y/N):		Date:		]		Start Stop	*N  *N	R1*	• • • • • • • • • • • • • • • • • • • •
Sequence ID/ Work Center ID	Operation Description		Set Up/ Run Hours	Too		Plan Code	Accept Qty	Reje Qty		Reject Number	Insp. Stamp	
Draw Nbr	Revision Nbr Rev D											
*100*	PURCHASING		0.00	-			_20	_ ପ	)		Au	
Waterjet FLOW CNC Waterjet	Memo 1-Cut as per Dwg Rev:_ Prog Rev:_	D	0.00								13,07	2
	2-Deburr if	necessary										
* <b>110</b>	QC2- Inspect parts off m	nachine FAI/FAIB	0.00	,			20		<b></b>		Ae	
QC Quality Control	Memo .	·	0.00				_~\_		<u> </u>		13.07	28

DQA:	Date:					WORK ORDER NON	cc		DRAANCE / LIDDATE				
QA Closed:			Date:			WORK ORDER NON-		JINFOI	RIVIANCE / OPDATE	W	ork Order up	odate only	AEROSPACE
Work Orde	or.					DISPOSITION			AGAINST	r DE	PARTMENT,	/PROCESS	
Part N	 No			<u>-</u>	<del></del>	Rework Scrap Use-as-is Suspected Unapproved		l .	Skid-tube Crosstube Machining Small Fab noforming Finishing Large Fab Composite		4	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
							ــــــــــــــــــــــــــــــــــــــ		composite	<u>- L</u>	<u>.</u>	Supplier	
Root Cause	Da	te	Step	Qty	Descr	ription of work order update or non-conformance		nitial ief Eng	Action Description		Sign & Date	Verification	QC Inspector
Design Doc/Data Equip/Tooling Handling/Pre Material Operator Offset/Setup Process Supplier Training Transport Unapproved													
							FAL	ULT CAT	regory				
Landir	Bending Centre Not Concentric Cracks Crimp/Kink/Ripple/Wave Cuffs Crushing Heat Treat Inspection Strip in Tube Marks/Chatter			General Bend BOM/Route Broken/Damage/Defect Burrs Contamination Countersink Cut Too Short Drawing Drill Holes		Grain Hardwa Inspecti Instruct	on Incomplete/Unqualified ions Incomplete/Unclear ined/off center		Outside Dim Over/Under Part Incorred Part Lost/Mi Part Moved Positioned V Power Loss/	tolerance ct issing Vrong	Pressure/Forced Set-up Temperature/Cure Weld Wrong Stock Pulled Other		
		_	quence t in Tub	۵		Finish Fit/Function		Out of (	Calibration				
		~ / (AA12)	CHE LULD	_		ICICAL MITCERNII	. 1		N=111=111 =				

Work Order ID			·	*103	R <b>7</b> 00*						Page 2	
Item ID: D2171 Revision ID:				Accept	*N900	040	100	)* s	etup Star	¹ *N	S1*	=
Item Name: Clamp		•							Stop	*N	S2*	- 1
Start Date: 6/24/1: Required Date: 7/06/1	- 0		20* 20*		Cust Item   Customer:						 : :	
Reference:			<b>/</b> (1					_	~:			
Approvals: Proce	ess Plan:	Date:		Tooling:	D	ate:		R	un Star	I/I	R1*	11.
QC:		Date:		SPC (Y/N):	D	ate:			Sto	*N	R2*	
Sequence ID/ Work Center ID	Operation Description			Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	-  
120	QC8- Inspect parts - sec	cond check		0.00				· / / /			(09 09	
*120*	Memo			0.00				<u>®</u>	<u> </u>	1-92	19-83	
Quality Control											w.,	
		•										
130	Form as per dwg			0.00				_			<b>3</b>	1.1
*130*	Small Fab			0.00				20		-	1.5	O
Brake NC Brake NC	Memo 1- remove	press and machin	ne marking :						**************************************			
SEPTURE THE	1 Telliove	P55 min									100	
											. 1	• 3

D 13-07-31

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0.00

QC5- Inspect part completeness to step on W/O

Memo

\*140\* QC Quality Control

DQA:		- Date:			. WORK ORDER NON	~	211501	SAAAICE / LIDDA:	TE			~~DART
QA Closed:		Date:			WORK ORDER NON-	-((	JNFOI	RIMANCE / UPDA		ork Order up	odate only	AEROSPACE
					DISPOSITION			A	GAINST DI	PARTMENT	/PROCESS	
Work Orde	er:				D avvo alv	1				٦	ا د د د د د د د د د د د د د د د د د د د	
Part N	١٥				Rework		i	<del></del>	osstube nall Fab	- n	Water Jet	Engineering
raiti	····			—	Scrap Use-as-is			~ <del></del>	inishing	-4	d. Eng. Coor. re/Packaging	Quality Other
NCR N	اo.				Suspected Unapproved		1116111	~ <del></del>	mposite	l vec/stol	Supplier	
					ouspected onapproved	J		zarge rab	"posite_	_		
Root				Desc	ription of work order update		Initial	Action	· · ·	Sign &		
Cause	Date	Step	Qty		or non-conformance	Ch	nief Eng	Description	n	Date	Verification	QC Inspector
Design												
Doc/Data												
Equip/Tooling												
Handling/Pre				i								
Material												
Operator												
Offset/Setup												
Process		]				ĺ						
Supplier		1										
Training												
Transport												
Unapproved		1		<u> </u>					-			
				····	FAI	ULT CAT	regory					
Landii	ng Gear				General	_	1			7	г	_
	Bending		-	Bend	<u> </u>	-	rogram	-	Outside Dim	<u> </u>	Pressure/Forced	
	Centre N	ot Concei	ntric		BOM/Route	<u> </u>	Grain			Over/Under	<b>-</b>	Set-up
	Cracks		<b></b>	-	Broken/Damage/Defect	<u> </u>	Hardwa		_	Part Incorred	<u> </u>	Temperature/Cure
	Crimp/Kink/Ripple/Wave			Burrs	<u> </u>	1	ion Incomplete/Unqualif	<b>├</b> ─	Part Lost/Mi	ssing	Weld	
	Courbing		<u> </u>	Contamination		4	ions Incomplete/Unclea	ar	Part Moved	Ĺ	Wrong Stock Pulled	
	Crushing			<u> </u>	Countersink	-	1	ned/off center		Positioned V	, ,	<del></del> ;
	Heat Trea			<u> </u>	Cut Too Short	-	Mislabe			Power Loss/	Surge	Other
	Inspection Strip in Tube		-	Drawing	Misread							
	Marks/Chatter			Drill Holes	$\vdash$	Off-set					· · · · · · · · · · · · · · · · · · ·	
	Turning S	•		<u> </u>	Finish	$\vdash$	4	Calibration				
	I IWave/Tw	vist in Tul	1e		Fit/Function	1	IOut of 9	Somuence				

Work Ordo June-24-13 2:1.		103700		*103	700*				Page 3
Item ID: Revision ID:	D2171			Accept	*N900	<b>04010</b>	<b>)*</b> Setu		*NS1*
Item Name:	Clamp							Stop	*NS2*
Start Date: Required Date:	6/24/13	Start Qty: 20.00 Req'd Qty: 20.00	*20* *20*		Cust Item I Customer:	D:			
Reference:	. , , , , , , , , , , , , , , , , , , ,		/()		<u> </u>				
Approvals:	Process	s Plan:	Date:	Tooling:	Dε	nte:	Run	Start Stop	*NR1*
	QC: _		Date:	_ SPC (Y/N):	Da	nte:		зюр	*NR2*
Sequence ID/ Work Center I	D	Operation Description Identify as per dwg & Stoc	k Location: ST 45	Set Up/ Run Hours	Tool ID	Tool # Plan Code		•	Reject Insp. Number Stamp
*150* Packaging Packaging		Мето	-5,	0.00			20 x	<u> </u>	D. 13-07-3
160		QC21- Final Inspection - V	Vork Order Release	0.00					
*160*		Mamo		0.00			MCZ	13	107-31

ME (3-7-3)

Memo

Quality Control

DQA:	Date:														
QA Closed:			Date:			WORK ORDER NON	-C(	ONFO	RMANCE / UF	PDATE	Wo	ork Order up	odate only	_	AEROSPACE
<del></del>					1	DISPOSITION				ΔGΔINST		PARTMENT			
Work Orde	er:					- DIST 05/11011	,			AGAMST	_	. A	T NOCESS		
						Rework			Skid-tube	Crosstube			Water Jet	_	Engineering
Part N	lo					Scrap			Machining	Small Fab	┝	1	d. Eng. Coor.		Quality
						Use-as-is	]	Therr	noforming	Finishing	-	Rec/Store/Packaging			Other
NCR N	10					Suspected Unapproved	}		Large Fab	Composite			Supplier		
Root					Descr	iption of work order update		Initial	Acti	ion		Sign &			
Cause	[	Date	Step	Qty		or non-conformance	Ch	nief Eng	Descri	iption		Date	Verification		QC Inspector
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Doc/Data															
Equip/Tooling													ı		!
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Material															
Operator							1								
Offset/Setup															
Process		·												-	
Supplier															
Training															
Transport															
Unapproved			·												
							FA	ULT CA	TEGORY						
Landir	ng Gea	r				General									
	Be	nding				Bend		Folio/F	Program		$\Box$	Outside Dim	ensions	P	ressure/Forced
	Ce	ntre No	t Concer	ntric		BOM/Route		Grain				Over/Under	tolerance	s	et-up
	Cra	icks				Broken/Damage/Defect		Hardwa	are			Part Incorred	ct [	Т	emperature/Cure
. [	Cri	mp/Kin	k/Ripple,	/Wave		Burrs	Г	Inspect	ion Incomplete/Un	qualified		Part Lost/Mi	ssing	٦v	Veld
	Cu	ffs				Contamination		Instruct	tions Incomplete/U	Inclear		Part Moved	Γ	٦v	Vrong Stock Pulled
	Cru	ıshing				Countersink		Misalig	gned/off center			Positioned V			
	Не	at Treat	t			Cut Too Short		Mislabe	eled			Power Loss/:	Surge [	$\neg$ c	ther
·	Ins	pection	Strip in	Tube		Drawing		Misrea	d			4	_		
Î	Ma	rks/Cha	atter			Drill Holes		Off-set							· <del></del>
	Tu	rning Se	equence			Finish		Out of	Calibration				· · · · · · · · · · · · · · · · · · ·		
	□ wa	ave/Twi	st in Tub	ne e		Fit/Function		Out of	Sequence						

H:/FORMS/Quality Assurance\approved QA/NCRWO RevH

Page 1

Work Order ID:

103700

Parent Item:

D2171

Parent Item Name:

Clamp

**Start Date:** 6/24/13

Required Date: 7/06/13

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP REV:A 11.04.26 now made in house DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S16GA		Purchased	No			100	sf	208.7102	0.0258	0.543158 0.59 -	>	.6	
304/316 Sheet .063				Location		Loc Oty	Lo	oc Code	المكن است المكن المكن			Ae	13.07.
				MAT020		208.7101686							
				122	245	0.1713688							
				123	136	140.8							
				124	428	23.61							
				124	1572	7.0181688							
				125	5599	37.110631							

DQA:		Date:			•								N	
QA Closed:		Date:			WORK ORDER NON-	-CC	ONFO	RMANCE / UPD		14/	l. O.d		_	AEROSPACE
QA Closed.		Date.							-	VVOI	k Order up	date only		····
Work Orde	er:				DISPOSITION				AGAINST I	DEP	ARTMENT	PROCESS		
					Rework		1	Skid-tube C	Crosstube			Water Jet		Engineering
Part N	lo				Scrap			Machining !	Small Fab		Pro	d. Eng. Coor.		Quality
					Use-as-is		Therr	noforming	Finishing	ng Rec/Store/Packa				Other
NCR N	lo				Suspected Unapproved			Large Fab C	omposite[			Supplier		
			T	· · ·		لـــا								
Root				Desc	ription of work order update	1	Initial	Action			Sign &	_		
Cause	Date	Step	Qty.		or non-conformance	Ch	nief Eng	Descripti	on		Date	Verification	4	QC Inspector
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Material Operator		]     .											1	
Offset/Setup		]     ;												
Process					·									
Supplier	$\dashv$												i	
Training	_	1												
Transport														
Unapproved									•					
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Landir	g Gear				General									
	Bending				Bend		Folio/F	rogram	ſ	C	utside Dim	ensions	Pr	essure/Forced
	Bending Centre Not Concentric			BOM/Route		Grain				ver/Under	tolerance	Se	et-up	
	Centre Not Concentric Cracks			Broken/Damage/Defect		] Hardwa	ire		P	art Incorrec	t [	Τe	emperature/Cure	
	Crimp/Kink/Ripple/Wave			Burrs		Inspect	ion Incomplete/Unqua	alified	P	art Lost/Mi	ssing	¬w	'eld	
	Cuffs				Contamination		Instruct	ions Incomplete/Uncl	ear	P	art Moved		_]w	rong Stock Pulled
	Crushing			_	Countersink		Misalig	ned/off center		P	ositioned W		_	
	Heat Trea				Cut Too Short		Mislabe	eled		P	ower Loss/S	Surge	01	ther
	Inspectio	· .	Tube		Drawing		Misread	t	_					
	Marks/Ch				Drill Holes		Off-set			_				
1	Turning S	•			Finish		Out of 0	Calibration		_				
		Fit/Function	1	Out of	Sequence									

DART AEROSPACE LTD	Work Order:	103700
Description: Clamp	Part Number:	D2171
Inspection Dwg: D2171 Rev: D	<u> </u>	Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

					· ·	
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.257	+0.006/-0.001	.260			V	JKM-01
0.75	+/-0.030	,75	-		٧	
0.40	+/-0.030	.५०	_		V	
4.968	+/-0.010	4,967	_		V	
4.158	+/-0.010	4,158	-		V	
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Measured by: Ae	Audited by: 13009	Prototype Approval:	N/A
Date: 13.07.28	Date: 13.07-29	Date:	N/A

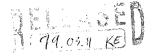
	Rev	Date	Change		Revise	d by	Approved	
ĺ	Α	08.06.16	New Issue		KJ/DD	all	137	
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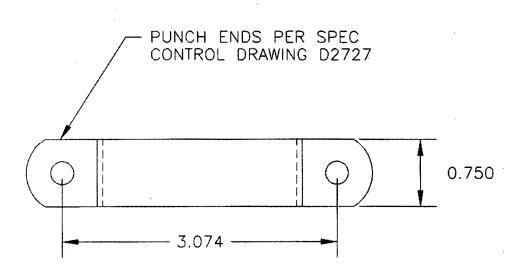
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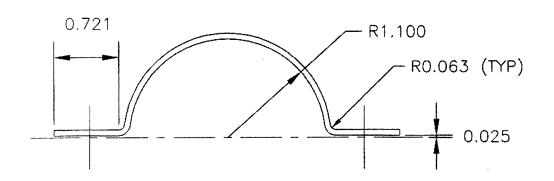




DESIG	BW DRAWN BY		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
CHECH	(ED / /)	APPROYED	DRAWING NO.	REV. D		
	$\mathcal{A}'$	KE	D2171 SHEET	1 OF 1		
DATE	<u> </u>	*	TITLE	SCALE		
99.0	3.08		CLAMP	1:1		
В		96.01.29	REDRAWN			
С		97.05.14	RADIUS CHANGED, CUSHION ADDED			
D		99.03.08	REMOVE CUSHION (TSR A890) 4.158 WAS 4.888			







MATERIAL: 304/316 SS 0.063 THICK FLAT LENGTH: 4.968 END-END 4.158 HOLE-HOLE

SHOP ( ), V

RETURNO )

ENGINE-RING

UNCONTROLLED ( ) ? V SUBJECT TO AMEND, II V 1306-21

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